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EXHIBIT "B"
[redacted] 25X1
26 March 1957

TASK III OVERRUN

INTRODUCTION

At the time that Contractor submitted his proposal for Task III, the full complexity of the system, which will be finally developed, was not fully realized. The original cost estimated, therefore, did not cover all the work which will have to be performed on this program. The following discussion will show that the Government is getting a system under Task III which has more components and is more complex than the [redacted] system, and yet will cost (including the additional overrun funds) considerably less than the [redacted] system. 25X1 25X1

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The equipment being designed and constructed under Task III of Contract [redacted] (See Figures 3-6 attached) is a direct successor to the [redacted] equipment which was refurbished and fabricated under Task II. Contractor's estimate for Task III (as well as Task II) was based mainly upon Contractor's experience with Contract [redacted] For this reason, the factors contributing to the forthcoming overrun on Task III are directly related to Contract [redacted] The following discussion compares Task III costs to [redacted] costs, both in terms of complexity (expressed in the quantity of comparable units) and in inflationary factors (expressed in the costs at the inception of [redacted] work and the cost of similar work at this time). 25X1 25X1 25X1 25X1 25X1 25X1

COMPARISON OF COMPLEXITY BETWEEN [redacted] AND TASK III SYSTEMS 25X1

A first impression of the magnitude of Task III as compared to [redacted] may be gained from the system configuration. Photographs of the High-Speed Terminal Equipment developed under Contract [redacted] are shown in Figures 1 and 2 for the Transmit and Receive Terminals, respectively. In contrast, the size and complexity of the [redacted] Terminals now being developed are illustrated in Figures 3 through 6. Four Terminals, each comparable to either of the two [redacted] Terminals, are to be provided. Twelve cabinets must be designed and constructed for Task III equipment as compared with seven cabinets for [redacted] (The two crypto cabinets and the Printer console will be Government furnished equipment). 25X1 25X1 25X1 25X1 25X1 25X1

The most significant comparison between [redacted] and Task III developmental efforts concerns the number of new chassis for Task III. In the [redacted] system there were eighteen [redacted] chassis drawers, or equivalents, of all-new design and construction. The corresponding number for Task III is twenty-three. The table set forth on page 2 compares the various sources of chassis drawers for [redacted] and Task III. 25X1 25X1 25X1 25X1

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SOURCE	[redacted]	TASK III
New Design	18	23
Supplied from Vendors	19	6
Supplied from Task II	--	28
Total Chassis	37	57

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The above table shows that Task III is far more complex than [redacted] The [redacted] chassis were, on an average, somewhat more expensive because several were comprised of radio-frequency circuits requiring special consideration. Also, the learning acquired by Contractor's engineers and technicians under [redacted] has lessened the cost to Task III for a given development. These factors have resulted in a lesser cost for Task III than [redacted] even though the Task [redacted] system is more complex. It is important to note that a "simple" increase in number of chassis or cabinets creates layout, material, cabling and fabrication costs, far out of proportion to a linear relationship in chassis count.

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The most direct way to economize on design and construction costs is to restrain the scope and quantity of new circuits and chassis. Contractor has followed this procedure, with the result that the number of cabinets required has been kept to a minimum. As the program evolved, it appeared that thirteen cabinets would be required. By following the foregoing procedure, this was reduced to eleven cabinets. This was accomplished through more sophisticated design approaches, especially through logical design simplifications in error-correction equipment, and by better packaging of audio data link circuits. No degradation in performance or capability was occasioned by this reduction.

Additional simplifications and resultant economies are possible if the user is willing to apply a human operator's judgment to some of the more difficult functions now requiring very complex electronic circuits. For example, in the error correction facility the decision as to which channel is faulty can be performed at low cost manually but is expensive to implement electronically. A discussion on some specific cases is scheduled for late March between Contractor's and Government engineers.

INFLATED MATERIAL COSTS

The increase in prices for quality electronic components from the time [redacted] work was at a maximum has been especially steep as compared to overall economy increases in prices. Since Task III (and Task II) was

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bid on the basis of [redacted] experience, it is appropriate to cite cases 25X1
of this inflation.

An especially pronounced example is provided by the vendor supplied power supplies used in all three systems, [redacted] Task II and Task III. 25X1
They are special dual, 0-300 volts, 300 milliampere supplies built to MIL Standards and of very high quality and reliability. Under Contract [redacted] unit cost was [redacted] for five items, including their development. 25X1
Task II required fifteen supplies, and no development, but unit cost was about [redacted] Task III requirements are for three additional 25X1
units, again without development, but a price of [redacted] is quoted! 25X1
The vendor is a reliable firm, and is dependent on [redacted] 25X1
[redacted] for good will. This vendor makes a convincing case of in- 25X1
creased costs on both [redacted] and Task II. The vendor claims the 25X1
[redacted] figure is near cost and does not begin to repay it for past 25X1
losses on this item. Its position is credible in view of the lack of lower bids in a field so competitive as power supplies. This power supply incident is one of extreme inflation in costs since Contract [redacted] but certainly less aggravated cases exist across the board. 25X1
Not one compensating reduction in vendors' quotations is known to have occurred.

INCREASED INTERNAL COSTS

There have been significant increases in Contractor's overall operating costs since the Task III proposal was submitted. Set forth below is a comparison between the price of the Contractor's proposal of 8 June 1956 for Task III versus the price which would be bid today for the same material charges and services, and the relative costs for Contract [redacted] 25X1
compared with the price of these same material charges and services today. The first case will show a "built-in" overrun on Task III, immeasurable even if it were possible to follow the original estimate for effort and material.

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[illegible] FACTORS

Contractor underestimated the magnitude of effort required to develop the Terminals of Task III. This came about from estimating only the added capabilities of the Task III High-Speed Processing System, and neglecting their overall effect on the system Terminals themselves. Thus, while Contractor has been successful in providing the added processing functions within the effort estimated, the unanticipated burden of additionally producing four complex deliverable Terminals has contributed most heavily to the anticipated overrun.

SUMMARY

To determine as closely as possible the cost of effort still required under Task III an intensive survey was made. Chassis by chassis, each specific operation, such as shop and wiring time, was critically estimated in the light of present status. At least two, and often three, qualified engineers agreed on each figure. Every effort was made to arrive at an economical evaluation. Throughout this evaluation, quality was never subject to compromise.

In review, it should be pointed out that for a cost of [redacted] the Government is getting a system more complex than the [redacted] system which cost [redacted], and which was developed at a time when contractor's operational costs were at least 20% lower. 25X1 25X1 25X1

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